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LIFE AFTER SERVICE STUDIES (LASS) SECONDARY ANALYSIS
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Predictors of Persistent Low Income

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Research Questions

This paper addresses the following question: Which service and demographic characteristics are most important in predicting persistent low income among recently released Canadian Forces Veterans?

Background

Income has been found to be an important determinant of health and low income or lack of income can also lead to homelessness. Health inequalities between socio-economic classes, i.e., lower income groups have poorer health than those in higher income groups, were recently confirmed by a Statistics Canada study of mortality rates[1]. The study found that life expectancies were lower for those with lower income but were even lower for those living in shelters, rooming houses and hotels which include the homeless. Remaining life expectancy at age 25 for men in the lowest income quintile was 48.2 compared to 55.3 years among those in the highest. Remaining life expectancy at age 25 for male residents of shelters, rooming houses and hotels at time of the 1991 Census was 41.8 years, or 10.8 years less than for the entire male cohort and 6.4 years less than those in the lowest income quintile.

Research in the United States found that economic reasons such as loss of a job, lost income and increased expenses are important predictors of homelessness among Veterans[2]. In a recent study involving interviews with 54 homeless Veterans across Canada[3], economic circumstances sometimes related to loss of a job due to alcohol, drug or mental problems have been cited as the reason for homelessness. In addition, there are some similarities between Veterans experiencing low income[4] and the homeless Veterans interviewed. Both groups have been found to have served for shorter periods of time. This study will be able to determine how well length of service alone predicts low income while controlling for age at release and other factors.
The issue of homelessness among Veterans has been the subject of much media attention recently. Most of this attention has focused on concerns that Veterans are more likely than the general population to be homeless. This is the case in the United States where Veterans account for 26% of the homeless population, but only 11% of the general adult population are Veterans[5]. Canada currently does not have an estimate of the size of the homeless Veteran population. However, in 2009, Veterans Affairs Canada began a partnership with the Mental Health Commission of Canada to identify

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1 Tjepkema M and Wilkins R. *Remaining life expectancy at age 25 and probability of survival to age 75, by socio-economic status and Aboriginal ancestry,* Statistics Canada Catalogue no. 82-003-X Health Reports, October 2011.
2 Tessler R, Rosenheck R, and Gamache G. Gender Differences in Self-Reported. *Journal of Social Distress and the Homeless.* 2001, Vol. 10, 3.
3 Ray SL and Forchuk C. The Experience of Homelessness among Canadian Forces and Allied Forces Veterans: Preliminary Findings. 2011.
4 MacLean MB, Van Til L, Thompson JM, Poirier A, Sweet J, Adams J, Sudom K, Campbell C, Murphy B, Dionne C & Pedlar D. *Income Study: Regular Force Veteran Report*: Veterans Affairs Canada, 2011.
5 Cunningham M, Henry M, and Lyon W. *Vital Mission: Ending Homelessness Among Veterans.* Washington, DC : National Alliance to End Homelessness, Homelessness Research, 2007.

Veterans in their At Home/Chez Soi Project[6]. This study, which is expected to be completed in 2013, will include 2,285 homeless people living with a mental illness in five cities across Canada.

The issue of low income also tends to underlie some of the debate related to the introduction of lump sum payments for disability compensation. In 2006, the New Veterans Charter introduced Disability Awards for all new conditions found to be entitled for compensation due to service relationship. At the same time a suite of programs and services were put in place to support re-establishment in civilian life. Previously, monthly pensions were paid as compensation for service-related conditions. Concerns have been raised by some Veterans' advocates and in the media about the longer-term financial impact on Veterans of these changes. Suggestions have also been made that certain groups of clients, especially younger clients and those with mental health conditions, may be having difficulty managing lump sum payments and may be left in financial hardship. In the spring of 2010, these concerns prompted Veterans Affairs to conduct a survey of clients who received an award to determine how they have used their award and how satisfied they are with their use of the award. Subsequently the department has changed legislation to allow Veterans/Canadian Forces members to choose to receive a single lump-sum payment, annual payments over any number of years, or receive part of the award as a lump sum and the remainder as annual payments.

A recent study of the incomes of Regular Force Veterans pre- and post-release conducted by VAC, Department of National Defense and Statistics Canada[7] found that, on average, 15% of Veterans were classified as having low income at some point after their release and less than 2% were below the low income measure every year post-release. Low income was found to be more likely among those released involuntarily, at younger ages, and with lower rank and fewer years of service. However, as some of these characteristics such as younger age and involuntary release are related, the relative importance of these and other characteristics in predicting low income is unknown.

From a policy perspective, attention needs to be focused on those consistently living in poverty, as this group is at higher risk of poor health and possibly homelessness. VAC needs to be able to identify the service and demographic factors, such as length of service or age at release, that predict poverty among Veterans in order to work with DND to ensure that appropriate services, benefits and referrals are in place prior to release and Veterans at risk can be targeted for outreach and monitoring. It is expected that this analysis will also inform a homelessness strategy that is currently under development within VAC and a targeted approach to addressing low income that could reduce pressures to reinstate disability pensions.

Method

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6 http://www.mentalhealthcommission.ca/English/Pages/homelessness.aspx

7 MacLean MB, Van Til L, Thompson JM, Poirier A, Sweet J, Adams J, Sudom K, Campbell C, Murphy B, Dionne C & Pedlar D. *Income Study: Regular Force Veteran Report*: Veterans Affairs Canada, 2011.

This analysis uses data from the Income Study and includes the Regular Force population released from 1998 to 2007, who were not serving as of November 2009 (36,638). The tables produced by Statistics Canada for the Income Study examined temporary and persistent low income by selected service and demographic characteristic. In the Income Study temporary low income was defined as at least once over the entire income time period of up to nine years post-release. Persistent low income was defined as low income in every year post-release. The before-tax Low Income Measure (LIM) [8] was used as the measure of low income. The Low Income Measure establishes a threshold below which persons are considered to be low income. The threshold is based on the distribution of before-tax income, and is set at half the median income for each family size.

The original definition of persistent low income allowed for the time period to vary depending on the year of release. For example, for those who released in 1998, those defined as having persistent low income would have experienced low income for nine years. In order to have a consistent time period this study defined persistent low income as experiencing low income in each of the first three years post-release. This definition required excluding those released from 2005 to 2007 as income data for three years post-release was not available. Those living in the territories and outside of the country at the time of release were also excluded from the analysis.

A logistic regression model was used to determine the predictors of persistent low income. Independent variables included age at release, gender, education, marital status, number of children, place of residence at release, rank at release, length of service, branch of service at release, release type and year of release all from the Department of National Defence administrative data and client status from the VAC administrative data. A backward stepwise regression procedure was used to select variables that improved the prediction of persistent low income.

Results

The original sample included 36,638 Regular Force Veterans released from 1998 to 2007. The exclusions included 17,998 Veterans who either did not report income in each of the first three years post-release or were released from 2005 to 2007, 308 who lived outside Canada or in the territories at the time of release and 28 with missing data. The final sample included 19,305 Veterans. Of this population, 300 or 1.6% experienced persistent low income (low income in each of the first three years post-release).

The highest rates of persistent low income were among those released at ages 15 to 19 (7%) followed by Veterans released involuntarily, Veterans with less than one year of service and Veterans released as recruits, all at 6%. Rates of persistent low income were higher than the average by at least a percentage point for those released at

8 Statistics Canada. *Low income cut-offs for 2008 and low income measures for 2007*. 2009. Catalogue no. 75F0002M, no. 002.

younger age groups (aged 24 or younger), single Veterans, those with four or more children, Veterans living in Newfoundland, Prince Edward Island and New Brunswick, those released as recruits, privates and cadets, those who served for 5 years or less and those released involuntarily. There was little variation in the rates of low income by year of release, education level and branch of service.

Table 1: Sample and Rate of Persistent Low Income

Characteristic (source)	Total Sample*	Not Persistent Low Income*	Persistent Low Income*	% Persistent Low Income*
Total	19,305	19,005	300	1.6
Age at Release (DND)				
15-19	730	685	50	6.6
20-24	2,170	2,060	105	4.9
25-29	1,900	1,860	40	2.0
30-34	1,970	1,930	40	2.1
35-39	2,950	2,920	30	1.0
40-44	4,520	4,490	30	0.7
45-49	2,350	2,345	5	0.1
50-54	1,755	1,750	5	0.2
55+	1,005	1,005	0	0
Gender (DND)				
Female	2,475	2,425	45	1.9
Male	16,830	16,580	255	1.5
Client Status as of March 2009 (VAC)[1]				
New Veterans Charter clients	900	890	15	1.4
Disability Pension clients	5,200	5,170	30	0.6
Non clients	13,200	12,945	255	1.9
Highest Education (DND)				
University	1,900	1,890	10	0.6
College/CEGEP/Technical	550	540	10	1.7
High School	4,880	4,820	65	1.3
Less Than High School	7,740	7,660	80	1.0
Unknown	4,240	4,100	135	3.2
Marital Status at Release (DND)				
Married/Common Law	13,115	13,005	110	0.8
Single Never Married	4,885	4,710	175	3.6
Separated/Widowed/Divorces or unknown	1,305	1,290	15	1.2
Number of Children at Release (DND)				
0	10,980	10,770	210	1.9
1	3,310	3,275	35	1.1
2	3,845	3,815	30	0.8
3+	1,170	1,145	20	1.9

Characteristic (source)	Total Sample*	Not Persistent Low Income*	Persistent Low Income*	% Persistent Low Income*
Province of Residence at Release (DND)				
Newfoundland and Labrador	455	435	20	4.2
Prince Edward Island	105	100	5	3.8
Nova Scotia	2,335	2,305	30	1.2
New Brunswick	1,000	975	25	2.6
Quebec	4,225	4,155	75	1.8
Ontario	6,180	6,090	90	1.4
Manitoba	705	695	10	1.7
Saskatchewan	365	360	5	0.8
Alberta	2,355	2,335	20	0.9
British Columbia	1,585	1,565	25	1.5
Rank at Release (DND)				
Senior Officers	1,650	1,650	0	0.1
Junior Officers	1,535	1,525	5	0.5
Cadet	860	830	30	3.6
Senior NCM	5,850	5,830	20	0.3
Junior NCM	6,115	6,050	65	1.0
Private	1,120	1,075	45	4.0
Recruit	2,170	2,040	130	6.0
Years of Service (DND)				
Less than 1	1,900	1,775	120	6.4
1 to 5	2,630	2,540	90	3.3
6 to 19	4,110	4,050	60	1.5
20 to 30	8,425	8,400	30	0.3
31 and over	2,240	2,240	0	0.1
Branch of Service at Release (DND)				
Air force	6,145	6,110	35	0.6
Army	8,780	8,595	185	2.1
Navy	3,090	3,045	45	1.5
Unknown	1,285	1,255	30	2.3
Release Type (DND)[2]				
Involuntary	920	860	60	6.4
Medical	4,435	4,395	40	0.9
Voluntary	10,690	10,500	190	1.8
Retirement age	1,435	1,430	0	0.1
Service complete	1,825	1,815	10	0.5
Release Year (DND)				
1998	2,820	2,780	40	1.5
1999	2,815	2,765	50	1.7
2000	2,900	2,865	35	1.2

Characteristic (source)	Total Sample*	Not Persistent Low Income*	Persistent Low Income*	% Persistent Low Income*
2001	2,575	2,530	45	1.8
2002	2,660	2,610	50	1.9
2003	2,675	2,635	40	1.5
2004	2,855	2,815	40	1.4

* Sample numbers rounded to nearest 5. Percentage living in persistent low income based on actual sample numbers.

1. New Veterans Charter (NVC) clients comprised Veterans in receipt of at least one of the NVC programs (Disability Awards, Rehabilitation, Earnings Loss, Career Transition Services, Canadian Forces Income Support and Health Insurance) as of March 2009. Disability Pension clients are in receipt of a monthly pension but not any NVC programs. A client in receipt of both a disability award and pension were considered an NVC client

2. Involuntary includes Misconduct-Dismissal, Service Misconduct, Illegally Absent, Fraudulent-Enrolment, Unsatisfactory-Conduct, Unsatisfactory-Performance, Not Advantageously Employed, Death and Transfer Out. Medical includes Medical-Disabled-Member and Medical-Disabled-MOC. Voluntary includes Vol-Immediate Annuity, Vol-Fixed Service and Vol-Other Causes. Service complete applies to the release of a member who has not reached retirement age but has completed a fixed period of service or the period of service has ended due to a change in classification or trade specifications.

The original model included a total of 12 variables. The backward stepwise regression eliminated eight variables (age at release, gender, client status, education, marital status, province of residence, branch and release year) that did not add to the prediction of persistent low income. The final model included a total of four variables: release type; rank at release; number of children and length of service (Table 2). Being released involuntarily (odds ratio 2.26) or as a recruit (odds ratio 1.83) was associated with increased odds of persistent low income. Each additional child increased the odds of persistent low income by 1.43. Each additional year of service was associated with decreased odds of persistent low income (odds ratio 0.90).

Table 2: Sample and Rate of Persistent Low Income

Independent Variable (Reference Group)	Odds Ratio	95% Confidence Interval (CI)*	
Release Type (Voluntary)			
Involuntary	2.256*	1.646	3.093
Medical	0.942	0.637	1.393
Retirement age	2.304	0.477	11.136
Service complete	0.677	0.333	1.375
Rank at Release (Junior NCM)			
Senior Officers	0.281	0.060	1.307
Junior Officers	0.336*	0.151	0.747
Cadets	0.835	0.487	1.608
Senior NCMs	0.888	0.483	1.635
Privates	1.238	0.112	2.122
Recruits	1.827*	1.112	3.001
Number of Children	1.427*	1.247	1.632
Years of Service	0.899*	0.868	0.931

* Significant as confidence interval does not include 1.

Discussion

This study found that 1.6% of the Veteran study population experienced persistent low income. Statistics Canada examined the persistent low income rates from the Survey

of Labour and Income Dynamics and found that 4% of the general population aged 16 to 64 working full-time year round experienced persistent low income (three consecutive years below the low income measure. While the rate of persistent low income among Veterans is likely lower than that of the general population, interventions can be focused on those at risk of persistent low income in order to reduce the adverse health effects of low income. Income support could be examined as a possible intervention as while VAC does have programs that compensate for disability and earnings loss these programs are not specifically designed to reduce low income.

Veterans released involuntarily were found to be at higher odds of persistent low income. Previous to this study it was thought that the higher rate of low income among the involuntarily released may be related to their relatively younger age at release. However, as this study controls for age at release, involuntary release at any age appears to be a risk factor.

Veterans who left as recruits and those with fewer years of service had higher odds of persistent low income. Some of this group may have been disadvantaged in terms of income prior to entering the military and their short military service may not have changed their pre-military circumstances.

Each additional child was also associated with higher odds of persistent low income. A possible explanation is that Veteran spouses who have more children are less attached to the labour force and earn less than their general population comparators on which the Low Income Measure thresholds are based. A study in the 1990s found average spousal employment income among military members was lower compared to the general population[9]. Single parent families may also be more at risk of persistent low income, however, the administrative data did not allow for this type of analysis.

Somewhat surprisingly being medically released or a VAC client was not associated with increased risk of persistent low income. A study by Hatfield[10] found that persons with work-limiting disabilities constituted the single largest group of individuals who were persistently in low income. However, the medically released and VAC clients (mostly medically released) include individuals with and without work-limiting disabilities. Many members are medically released for conditions that prevent them from continuing to work in the military under the "Universality of Service Principle"[11] but would not be a barrier for work in civilian life. Also the medically released receive 75% of their per-release salary for two years post-release which is likely preventing many from experiencing low income. Further study could examine persistent low income among the sub-group with more severe disabilities and examine the impact of disability

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9 Truscott S. *Military spousal employment and loss of income.* Operational Research and Analysis, Directorate of Social and Economic Analysis, Department of National Defence, ORA Project 712, 1995.

10 Hatfield, M. *Persistent Low-income: A Key Barrier to Social Inclusions.* Applied Research Branch, Human Resources Development Canada, 2003.

11 The principle holds that CF members are liable to perform general military duties and common defence and security duties, not just the duties of their military occupation or occupational specification. This may include, but is not limited to, the requirement to be physically fit, employable and deployable for general operational duties. Source: http://www.admfincs.forces.gc.ca/dao-doa/5000/5023-0-eng.asp

benefits.

Conclusion

Being released involuntarily or as a recruit and having more children was associated with greater odds of persistent low income. Staying in the military longer decreased the odds of experiencing persistent low income. As these factors are known at release, pre-release screening can be informed by these findings. Also, the findings could be used to develop screening and outreach strategies for Veterans. Screening for risk of persistent low income and subsequent referrals to community services, VAC programs such as Career Transition Services, or possibly VAC case management could help mitigate adverse health outcomes and possibly prevent homelessness.

Interpretation Guidance

- The results cannot be generalized to all Veterans as the findings represent only a sub-component of the Veteran population (Regular Force Veterans released from 1998 to 2007).

- Disability Benefits paid by VAC are not taxable income and are therefore not reported in the Income Study data which is based on the T1 general family file income tax form.

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